THE KEY TO PREVENTING MOTHER-TO-CHILD TRANSMISSION OF HIV

OVERVIEW

Modern HIV medication now enables people living with HIV to live longer, healthier lives than ever before. Antiretroviral treatment (ART) reduces the amount of HIV circulating in the mother's blood – the viral load – which directly correlates with the risk of transmission to the infant during pregnancy, childbirth, and breastfeeding. By increasing the number of mothers on ART worldwide, the number of new infant HIV infections has declined by 60% over the last 15 years.[1] Despite this success, additional work is needed to eliminate mother-to-child HIV transmission, including:

- **Retaining mothers and babies in care**: Mothers and babies need to be retained in care through the end of breastfeeding (the HIV transmission risk period), which may extend to two years or more in many resource-limited settings. Evidence from Swaziland and Malawi suggests that national retention in programs that prevent mother-to-child transmission (PMTCT) hovers between 50-73%,[2] with retention dropping even further in postnatal care.

- **Testing babies who have HIV-positive mothers**: A key component of PMTCT programs is ensuring that all infants exposed to HIV are tested for HIV periodically and linked to HIV treatment promptly if they are infected. In 2015, less than half of HIV-exposed babies were tested for HIV in the first two months of life;[1,3] testing drops even further at 18 months.

Herein lies our greatest challenge: retaining mothers on ART and making sure their HIV-exposed babies receive appropriate testing and care until the end of the breastfeeding period.

CDC'S ROLE

The U.S. Centers for Disease Control and Prevention (CDC) plays a central role in promoting PMTCT programs that are based on the latest scientific evidence and guidelines. As part of this approach, CDC consistently strives to drive policies and research that will mitigate key challenges central to the elimination of mother-to-child transmission. One example is the current initiative to improve viral load monitoring in HIV-infected pregnant and breastfeeding women so that women on ART who have high viral loads are identified promptly. CDC's Maternal and Child Health Branch in the Division of Global HIV & TB is collaborating with Uganda to explore the best viral load testing intervals to make sure that all mothers have low viral loads by the time they deliver.

CDC provides technical support in resource-limited settings, such as Uganda, and other sub-Saharan African countries. We routinely conduct operational research within these countries to improve PMTCT services. For example, CDC and its partners conducted implementation research to better understand the needs and preferences of women attending PMTCT clinics in order to improve retention in care for mothers and babies. These data show that what women value most is receiving respectful care by providers and having access to non-HIV health services in the same visit to a clinic. CDC is now working with country staff in Swaziland and Malawi to identify strategies for improving respectful care and patient engagement in PMTCT services.

To disseminate technical information and programmatic best practices, CDC's Maternal and Child Health Branch holds monthly Learning Collaborative calls with our counterparts in 22 country offices around the world. This forum uses a peer-to-peer approach so that country offices can discuss challenges and share promising practices that are most effective in eliminating mother-to-child HIV transmission.

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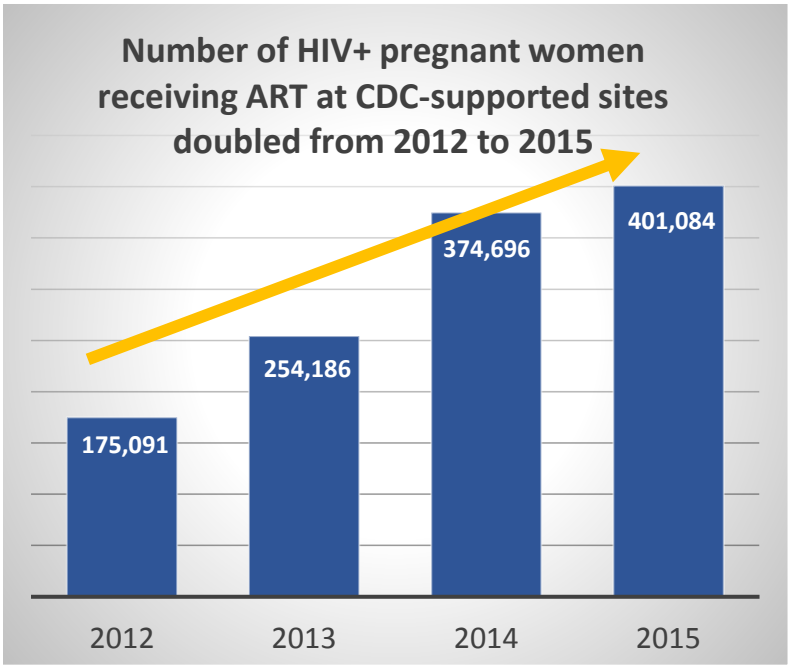
[1] UNAIDS. On the Fast-Track to AIDS Free Generation. 2016.

[2] TENTHANI L, HAAS AD, TWEYA H, et al. Retention in care under universal Antiretroviral Therapy for HIV Infected Pregnant and Breastfeeding Women ("Option B+") in Malawi. AIDS (London, England). 2014;28(4):589-598.

[3] Abrams EJ et al. CROI 2016 Boston Abs 34

ACCOMPLISHMENTS / RESULTS

As an implementing agency of the U.S. President's Emergency Plan for AIDS Relief (PEPFAR), CDC has played a critical role in supporting the expansion of Option B+, a policy that provides lifelong ART to all HIV-positive pregnant and breastfeeding women. The success of this transition is demonstrated by the fact that the number of pregnant women on ART attending sites supported by CDC partners more than doubled from 175,091 in 2012 to 401,084 in 2015.



In 2015, in partnership with local governments and Ministries of Health, CDC helped to:

- Initiate ART for more than 90% of pregnant women identified as HIV-positive at CDC-supported PMTCT facilities; and
- Deliver treatment for more than 400,000 HIV-positive women during pregnancy and childbirth to reduce the risk of mother-to-child transmission

National governments' adoption of Option B+ required extensive policy discussions, and CDC staff played a key role to support this process. By 2016, all CDC-supported countries had adopted Option B+. For example, CDC staff from several branches collaborated in 2015 to address the concerns of the Ministry of Health of Cote d'Ivoire by using economic analysis to illustrate the cost effectiveness of Option B+. Armed with this new data, the government swiftly adopted Option B+ and developed a rapid nationwide implementation plan that was supported by the PEPFAR team.

FUTURE EFFORTS

CDC aims to eliminate mother-to-child transmission (EMTCT). We are working closely with global partners and Ministries of Health to establish global criteria for validation of EMTCT. Cuba and Thailand have been validated for EMTCT; CDC is now working to achieve EMTCT in the first country in Africa.

CDC continues to identify and address gaps in achieving EMTCT, including:

- Addressing remaining gaps in PMTCT services for vulnerable populations, such as pregnant adolescents. CDC is implementing a project with Kenya to provide enhanced support to pregnant adolescents and young women, including tailored health education, targeted peer and community support, and a model of care used for high-risk pregnancies in the United States.

- Retaining women on life-long ART and systematically following up with mothers and infants throughout the breastfeeding period remains a challenge for PMTCT programs in resource-limited settings. At CDC, we are piloting innovative strategies to address these challenges. We are using anonymous feedback from women receiving antenatal care in Swaziland to continuously improve service quality and patient-provider relationships. We are also supporting Ministries of Health in introducing routine and enhanced monitoring systems to track mothers and babies during the breastfeeding period.

- Testing HIV-exposed infants remains a major challenge and a CDC priority. CDC works with partners to address gaps in testing HIV-exposed infants by bolstering PMTCT programs to ensure robust lab and transport systems, improve tracking of infants, and use innovative strategies such as birth testing and point-of-care testing. CDC's evidence-based approach guides the development of program-level guidance and targeted technical assistance.

BENEFITS OF OUR WORK

Through our work as a PEPFAR implementing agency, CDC has helped prevent HIV infection in more than 1.5 million babies born to HIV-positive mothers, furthering our progress in the fight against HIV. HIV is a leading cause of mortality among women of reproductive age; in sub-Saharan Africa, one quarter of deaths among pregnant or breastfeeding women is a result of HIV.[4] CDC is saving mothers' lives with life-long ART and by strengthening the clinical capacity of local maternal and child health systems around the world. CDC strives to keep mothers healthy and their babies HIV-free, and to help families to be productive and contributing members of their communities.

[4] Zaba B, Calvert C, Marston M, Isingo R, Nakiyingi-Miiro J, et al. (2013) Effect of HIV infection on pregnancy-related mortality in sub-Saharan Africa: secondary analyses of pooled community-based data from the network for Analysing Longitudinal Population-based HIV/AIDS data on Africa (ALPHA). Lancet 381: 1763–1771.